Facility Name: City of Watsonville Wastewater Treatment Plant Monitoring Period 8 / 01 / 14 to 9 / 30 / 14

	As	Cd	Cu	Pb	Hg	Mo	Ni	Se	Zn	Org-N	NH ₄ -N	% solids
Result	6.7	3.4	510	15	1.0	15	24	7.1	830	23000	30000	16.7
Table 3	41	39	1500	300	17	na	420	100	2800	na	na	na
Table 1	75	85	4300	840	57	75	420	100	7500	na	na	na

Sampling date(s): 8-14-14, 8-25-14
2. Class B Pathogen Reduction: (Check off and fill in applicable portion)
anaerobic digestion for to days at to degrees F / C (range for past month) Class B: time (days) ≥ 120 - 3(temp, degrees C) for times between 15 and 60 days aerobic digestion for to days at to degrees F / C (range for past month) Class B: time (days) ≥ 120 - 4(temp, degrees C) for times between 40 and 60 days drying beds for to months (attach records of dates in and out) Class B: time > 3 months; 2 months > 0 degrees C X fecal colliform: geometric mean of seven samples = (attach lab results) Class B: geometric mean of seven samples is < 2,000,000 mpn lime stabilization: pH at 2 hours after addition = Class B: pH 2 hours after addition of lime is ≥ 12
3. Vector Attraction Reduction:
X Option 1: % VS _{in} = 75.8 % VS _{out} = 62.7 % VSR = 46.4% VAR: VSR > 38% Option 2/3: Bench scale test: % VSR = after days VAR: additional VSR < 17% after 40 days(anaerobic), < 15% after 30 days (aerobic) Option 4: SOUR = VAR: SOUR < 1.5 mg O ₂ /hr/gram (dry weight) Option 5: Composted days at temps of to degrees F/C (attach times/temps) VAR: temp > 40 degrees C for 14 days, w/5 days > 45 degrees C Option 6: time alkali added: pH after 2 hours = pH after 22 hours = VAR: pH ≥ 12 for 2 hours after alkali addition, ≥ 11.5 for additional 22 hrs Option 7: % solids = Stabilization method: VAR: stabilized solids > 75% Option 8: % solids = VAR: unstabilized solids > 90% Option 9/10: Applier will inject/incorporate within hours VAR: injection within 1 hour, incorporation within 6 hours
Certification: I certify, under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or the persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.
Name and Official Title: <u>Barbara Picrson</u> , <u>Laboratory Manager</u>
Phone: (831) 768-3179 E-mail: bpierson@ci.watsonville.ca.us Signature: Date: 8/12/15



City of Watsonville 500 Clearwater Lane

Watsonville, CA 95077

Reported:

09/03/2014 16:04

Project: Bi-Monthly Biosolids

Project Number: Nutrient & Metals

Project Manager: Barbara Pierson

Chemical Analysis

BCL Sample ID: 1419078-01	Client Samp	ole Name:	142437 WWTP	Biosolids, 8/1	4/2014 1:50	:00PM, B. Pierson, T	.Nguyen, L. Rios,	A. Avidano	
Constituent	Dry Basis Result	As Recvd Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#
Н	7.63	7.63	pH Units	0.05	0.05	EPA-9040		pH1:3	1
pH Measurement Temperature	23.9	23.9	С	0.1	0.1	EPA-9040			1
Nitrate as N	2.4	0.40	mg/kg	1.0	0.26	EPA-300.0	ND	J	2
Total Kjeldahl Nitrogen	53000	8800	mg/kg	400	160	EPA-351.2	ND	A01	3
Ammonia as N	30000	5000	mg/kg	500	250	EPA-350.1	ND	A01	4
Total Phosphorus	30000	5000	mg/kg	200	86	EPA-365.4	ND	A01	5
Solids	100	16.7	%	0.05	0.05	SM-2540G	19 1.8		6

			Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-9040	08/21/14	08/21/14 14:30	DIW	MANUAL	1	BXH2107	
2	EPA-300.0	08/26/14	08/27/14 13:25	TMS	IC1	1	BXH2493	
3	EPA-351.2	08/28/14	08/29/14 10:43	JP1	SC-1	10	BXH2776	
4	EPA-350.1	08/27/14	08/28/14 08:47	JP1	SC-1	50	BXH2631	
5	EPA-365.4	08/28/14	08/28/14 16:27	JP1	SC-1	20	BXH2777	
6	SM-2540G	08/22/14	08/22/14 11:05	RAC	MANUAL	1	BXH2495	2.4

organic Nitrogen = TKN- Ammonia 53,000-30,000 = 23,000



Reported:

09/03/2014 16:04

Project: Bi-Monthly Biosolids

Project Number: Nutrient & Metals Project Manager: Barbara Pierson

BCL Sample ID:	1419078-01	Client Samp	le Name:	142437 WWTF	Biosolids, 8/1	4/2014 1:50	:00PM, B. Pierson, T.	Nguyen, L. Rios, A	A. Avidano	
Constituent		Dry Basis Result	As Recvd Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#
Arsenic		6.7	1.1	mg/kg	1.0	0.40	EPA-6010B	ND		1
Cadmium		3.4	0.56	mg/kg	0.50	0.052	EPA-6010B	ND		1
Chromium		77	13	mg/kg	0.50	0.050	EPA-6010B	ND		2
Copper		510	84	mg/kg	1.0	0.050	EPA-6010B	ND		1
Lead		15	2.5	mg/kg	2.5	0.28	EPA-6010B	ND		1
Mercury		1.0	0.17	mg/kg	0.16	0.036	EPA-7471A	ND		3
Molybdenum		15	2.5	mg/kg	2.5	0.050	EPA-6010B	ND		1
Nickel		24	3.9	mg/kg	0.50	0.15	EPA-6010B	ND		1
Selenium		7.1	1.2	mg/kg	1.0	0.98	EPA-6010B	ND		1
Zinc		830	140	mg/kg	2.5	0.087	EPA-6010B	0.30		1
Boron		18	3.0	mg/kg	5.0	0.50	EPA-6010B	ND	J	2
Potassium		1100	180	mg/kg	50	5.0	EPA-6010B	ND		2

			Run				QC		
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	2.00	
1	EPA-6010B	08/20/14	08/23/14 01:43	JRG	PE-OP1	0.943	BXH1875		
2	EPA-6010B	08/20/14	08/21/14 16:24	ARD	PE-OP1	0.943	BXH1875		
3	EPA-7471A	08/22/14	08/25/14 10:38	MEV	CETAC1	0.992	BXH2149		

Facility Name: City of Watsonville Wastewater Treatment Plant Monitoring Period 10 / 01 / 14 to 11/30 / 14

	As	Cd	Cu	Pb	Hg	Mo	Ni	Se	Zn	Org-N	NH ₄ -N	% solids
Result	8.7	1.9	440	11	1.1	12	31	ND	860	40000	11000	16.6
Table 3	41	39	1500	300	17	na	420	100	2800	na	na	na
Table 1	75	85	4300	840	57	75	420	100	7500	na	na	na

1 abic 1	13	0.5	4300	040	37	13	420	100	7300	ma	na	па
Sampling d	late(s): _	10-9-1	4, 10-27-1	14								
2. Class B l	Pathogen	Reduct	ion: (Che	ck off ar	nd fill in	applicab	le portio	n)				
Clas	ss B: time c digestic ss B: time g beds for ss B: time oliform: g ss B: geor abilizatic	e (days) on for e (days) cto e > 3 mo geometr metric n on: pH a	≥ 120 - 3(to	temp, de _ days at _ temp, de nths (att onths > 0 f seven s ven samp	grees C) legrees C ach reco degrees amples = oles is < 2 dition =	for time c de c) for time rds of da s C = 13477 2,000,000	es betwee egrees F / nes betwee ites in an (attach	n 15 and C (rang en 40 ar d out)	d 60 days ge for past id 60 days	or past mon	nth)	
3. Vector A	ttraction	Reduct	ion:									
Opti Opti Opti Opti Opti Opti	VAR: VS on 2/3: B on 2/3: B on 2/3: B on 4: SO VAR: SO on 5: Co VAR: ten on 6: tim VAR: pF on 7: % s VAR: sta on 8: % s VAR: uns ion 9/10:	$R > 38\%$ ench scalitional UR =UR < 1. mposted up > 40 e alkali I \geq 12 fo solids = tbilized solids = stabilized Applier	% ale test: % VSR < 17' 5 mg O ₂ /h	o VSR = % after or/gram ys at ten for 14 d p after all stabilizat 5% 90% t/incorpe	ai 40 days((dry wei ups of ays, w/5 H after 2 (ali addi tion met)	fter	days ic), < 159deg; 15 degree = pH 1.5 for achour	rees F/C es C after 22 Iditional	30 days (ac (attach tir hours = _	nes/temps)		
Certificatio or supervisi information responsible accurate, an possibility of	ion in acc n submitt for gathe nd compl	cordance ed. Bas ering the ete. I an	e with a sy ed on my i e informat m aware tl	stem de inquiry tion, the	signed to of the pe informa e are sign	assure propertion assure propertion submitted	that qual persons v mitted is	ified per who man , to the b	rsonnel pro age the sy best of my	operly gath stem or the knowledge	er and eval persons di and belief,	luate the rectly true,
Name and (Official T	itle: <u>E</u>	Barbara Pi	erson, I	Laborato	ry Mana	ager .					
Phone: (83)	1) 768-31	79' _	E-mai	il: <u>bpie</u>	rson@ci		ille.ca.us		-	_		
oignature:	1	, (0	0			Da	te:	8/12/1:	3			



Reported: 11/04/2014 17:18
Project: Bi-Monthly Biosolids

Project Number: Nutrients and Metals
Project Manager: Barbara Pierson

Chemical Analysis

BCL Sample ID: 1424368	-01 Client Samp	le Name:	142942 WW	/TP Biosoli	ds, 10/9/20	014 10:45:00AN	/I, J. Camacho		
	Dry Basis	As Recvd					MB	Lab	4.4
Constituent	Result	Result	Units	PQL	MDL	Method	Bias	Quals	Run#
рН	7.88	7.88	pH Units	0.05	0.05	EPA-9040		pH1:1	1
pH Measurement Temperature	21.7	21.7	С	0.1	0.1	EPA-9040		pH1:3	1
Nitrate as N	4.0	0.66	mg/kg	1.0	0.26	EPA-300.0	ND	J	2
Total Kjeldahl Nitrogen	51000	8600	mg/kg	400	160	EPA-351.2	190	A01	3
Ammonia as N	11000	1800	mg/kg	200	100	EPA-350.1	ND	A01	4
Total Phosphorus	28000	4700	mg/kg	200	86	EPA-365.4	ND	A01	5
Solids	100	16.6	%	0.05	0.05	SM-2540G		,	6 ·

			Run				QC
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID
1	EPA-9040	10/17/14	10/17/14 09:30	DIM	MANUAL	1	BXJ1638
2	EPA-300.0	10/16/14	10/16/14 21:41	OLH	IC5	1	BXJ1559
3	EPA-351.2	10/31/14	11/03/14 17:35	JP1	SC-1	10	BXJ2914
4	EPA-350.1	10/23/14	10/23/14 15:52	JP1	SC-1	19.608	BXJ2171
5	EPA-365.4	10/30/14	11/03/14 15:25	JP1	SC-1	20	BXJ2916
6	SM-2540G	10/20/14	10/20/14 14:25	RAC	MANUAL	1 .	BXJ1786

organic Nitragen = TKN - Annonia = 51000-11000=40,000



Reported:

11/04/2014 17:18

Project: Bi-Monthly Biosolids

Project Number: Nutrients and Metals

Project Manager: Barbara Pierson

BCL Sample ID:	1424368-01	Client Samp	le Name:	142942 WV	VTP Biosoli	ds, 10/9/20	014 10:45:00AM	l, J. Camacho		
Constituent		Dry Basis Result	As Recvd Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#
Arsenic		8.7	1.4	mg/kg	1.0	0.40	EPA-6010B	ND		1
Cadmium		1.9	0.32	mg/kg	0.50	0.052	EPA-6010B	ND	J	1
Chromium		86	14	mg/kg	0.50	0.050	EPA-6010B	0.050		1
Copper		440	73	mg/kg	1.0	0.050	EPA-6010B	0.15		1.
Lead		11	1.9	mg/kg	2.5	0.28	EPA-6010B	ND	J	1
Mercury		1.1	0.18	mg/kg	0.16	0.036	EPA-7471A	ND		2
Molybdenum		12	1.9	mg/kg	2.5	0.050	EPA-6010B	0.15	J	1
Nickel		31	5.1	mg/kg	0.50	0.15	EPA-6010B	ND		1
Selenium		ND	ND	mg/kg	1.0	0.98	EPA-6010B	ND		3
Zinc		860	140	mg/kg	2.5	0.087	EPA-6010B	0.68		1
Boron		21	3.6	mg/kg	5.0	0.50	EPA-6010B	ND	J	1
Potassium		1100	180	mg/kg	50	5.0	EPA-6010B	7.0		1

			Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	y and the second
.1 .	EPA-6010B	10/21/14	10/23/14 00:09	SRM	PE-OP2	0.990	BXJ1939	
2	EPA-7471A	10/17/14	10/17/14 14:11	MEV	CETAC1	0.992	BXJ1624	
3	EPA-6010B	10/21/14	10/23/14 21:33	SRM	PE-OP2	0.990	BXJ1939	

Facility Name: City of Watsonville Wastewater Treatment Plant Monitoring Period 12 / 01 / 14 to 01/31 / 15

	As	Cd	Cu	Pb	Hg	Mo	Ni	Se	Zn	Org-N	NH ₄ -N	% solids
Result	4.1	2.8	510	21	1.7	12	33	8.7	1000	44100	7900	16.9
Table 3	41	39	1500	300	17	na	420	100	2800	na	na	na
Table 1	75	85	4300	840	57	75	420	100	7500	na	na	na

Sampling date(s):12/15/14, 12/17/14
2. Class B Pathogen Reduction: (Check off and fill in applicable portion)
anaerobic digestion for to days at to degrees F / C (range for past month) Class B: time (days) ≥ 120 - 3(temp, degrees C) for times between 15 and 60 days aerobic digestion for to days at to degrees F / C (range for past month) Class B: time (days) ≥ 120 - 4(temp, degrees C) for times between 40 and 60 days drying beds for to months (attach records of dates in and out) Class B: time > 3 months; 2 months > 0 degrees C X fecal colliform: geometric mean of seven samples = 4508 (attach lab results) Class B: geometric mean of seven samples is < 2,000,000 mpn lime stabilization: pH at 2 hours after addition = Class B: pH 2 hours after addition of lime is ≥ 12
3. Vector Attraction Reduction:
Certification: I certify, under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or the persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.
Name and Official Title: <u>Barbara Picrson</u> , <u>Laboratory Manager</u>
Phone: (831) 768-3179 E-mail: bpierson@ci.watsonville.ca.us Signature: Date: 8/12/15



Reported: 01/07/2015 22:51

Project: Bi-Monthly Biosolids

Project Number: [none]

Project Manager: Barbara Pierson

Chemical Analysis

BCL Sample ID:	1430609-01	Client Samp	le Name:	WWTP Bios	olids, 12/1	7/2014 10	:23:00AM, E.Mo	Claine		1
Constituent		Dry Basis Result	As Recvd Result	Units	PQL	MDL.	Method	MB Bias	Lab Quals	Run#
рН		7.86	7.86	pH Units	0.05	0.05	EPA-9040		pH1:3	1
pH Measurement Ten	nperature	19.5	19.5	. с	0.1	0.1	EPA-9040			. 1
Total Kjeldahl Nitroge	en	52000	8700	mg/kg	400	160	EPA-351.2	ND	A01	2
Ammonia as N		7900	1300	mg/kg	200	100	EPA-350.1	ND	A01	3
Total Phosphorus		30000	5100	mg/kg	200	86	EPA-365.4	90	A01	4
Solids		100	16.9	%	0.05	0.05	SM-2540G			5

			Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-9040	12/29/14	12/29/14 12:15	DIW	MANUAL	1	BXL2604	
2	EPA-351.2	12/26/14	12/30/14 09:06	JP1	SC-1	10	BXL2416	
3	EPA-350.1	12/26/14	12/30/14 17:17	JP1	SC-1	19.231	BXL2410	
4	EPA-365.4	12/26/14	12/29/14 10:35	JP1	SC-1	20	BXL2417	
5	SM-2540G	12/26/14	12/26/14 14:30	RAC	MANUAL	1	BXL2426	

organic Nitroben = TKN - ammonia 52000 - 7900 = 44,100



Reported: 01/07/2015 22:51

Project: Bi-Monthly Biosolids

Project Number: [none]

Project Manager: Barbara Pierson

BCL Sample ID:	1430609-01	Client Samp	le Name:	WWTP Bios	solids, 12/1	7/2014 10	:23:00AM, E.Mc	Claine		
Constituent		Dry Basis Result	As Recvd Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#
Arsenic		4.1	0.70	mg/kg	1.0	0.40	EPA-6010B	ND	J	1
Cadmium		2.8	0.47	mg/kg	0.50	0.052	EPA-6010B	ND	J	1
Chromium		87	15	mg/kg	0.50	0.050	EPA-6010B	ND		1
Copper		510	85	mg/kg	1.0	0.050	EPA-6010B	ND		1
Lead		21	3.5	mg/kg	2.5	0.28	EPA-6010B	ND		. 1
Mercury		1.7	0.29	mg/kg	0.16	0.036	EPA-7471A	ND		2
Molybdenum		12	2.1	mg/kg	2.5	0.050	EPA-6010B	0.052	J	1
Nickel		33	5.6	mg/kg	0.50	0.15	EPA-6010B	ND		1
Selenium		8.7	1.5	mg/kg	1.0	0.98	EPA-6010B	ND		1
Silver		2.4	0.41	mg/kg	0.50	0.067	EPA-6010B	ND	J	1
Zinc		1000	170	mg/kg	2.5	0.087	EPA-6010B	0.16		1
Boron		38	6.5	mg/kg	5.0	0.50	EPA-6010B	0.99		1
Potassium		1300	210	mg/kg	50	5.0	EPA-6010B	ND		1

			Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-6010B	12/23/14	12/24/14 10:12	ARD	PE-OP3	0.990	BXL2195	
2	EPA-7471A	01/06/15	01/06/15 09:58	MEV	CETAC1	0.992	BYA0179	



Reported: 01/07/2015 22:51
Project: Bi-Monthly Biosolids

Project Number: [none]

Project Manager: Barbara Pierson

EPA Method 1664

BCL Sample ID:	1430609-01	Client Samp	le Name:	WWTP Bios	solids, 12/1	7/2014 10	:23:00AM, E.McC	laine		
Constituent		Dry Basis Result	As Recvd Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#
Oil and Grease		640	110	mg/kg	50	20	EPA-1664A HEM	ND		1

			Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-1664A HEM	01/05/15	01/05/15 07:30	MAM	Inst	0.992	BYA0150	

Facility Name: City of Watsonville Wastewater Treatment Plant Monitoring Period 02 / 01 / 15 to 03/31 / 15

	As	Cd	Cu	Pb	Hg	Mo	Ni	Se	Zn	Org-N	NH ₄ -N	% solids
Result	ND	3.0	520	19	1.1	10	27	ND	1000	41200	7800	17.9
Table 3	41	39	1500	300	17	na	420	100	2800	na	na	na
Table 1	75	85	4300	840	57	75	420	100	7500	na	na	na

Sampling data(s): 2/26/15 2/22/15
Sampling date(s):2/26/15, 2/23/15
2. Class B Pathogen Reduction: (Check off and fill in applicable portion)
anaerobic digestion for to days at to degrees F / C (range for past month) Class B: time (days) ≥ 120 - 3(temp, degrees C) for times between 15 and 60 days aerobic digestion for to days at to degrees F / C (range for past month) Class B: time (days) ≥ 120 - 4(temp, degrees C) for times between 40 and 60 days drying beds for to months (attach records of dates in and out) Class B: time > 3 months; 2 months > 0 degrees C X fecal coliform: geometric mean of seven samples = 6884 (attach lab results) Class B: geometric mean of seven samples is < 2,000,000 mpn lime stabilization: pH at 2 hours after addition = Class B: pH 2 hours after addition of lime is ≥ 12
3. Vector Attraction Reduction:
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
Certification: I certify, under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or the persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.
Name and Official Title: Barbara Pierson, Laboratory Manager
Phone: (831) 768-3179 E-mail: ppierson@ci.watsonville.ca.us Signature: Date: 8/12/15



Reported: 03/17/2015 12:59 Project: Bi-Monthly Biosolids

Project Number: Nutrients & Metals
Project Manager: Barbara Pierson

Chemical Analysis

BCL Sample ID:	1505047-01	Client Samp	le Name:	150535 WW	/TP Biosoli	ds, 2/26/20	015 10:00:00AN	1, J. Gonzalez		
Constituent		Dry Basis Result	As Recvd Result	Units	PQL	MDL	Method	MB Bias	Lab	Run#
рН		7.90	7.90	pH Units	0.05	0.05	EPA-9040		pH1:3	1
pH Measurement Tem	perature	21.5	21.5	С	0.1	0.1	EPA-9040			1
Nitrate as N		9.8	1.8	mg/kg	1.0	0.26	EPA-300.0	ND		2
Total Kjeldahl Nitroge	n	49000	8700	mg/kg	800	320	EPA-351.2	ND		3
Ammonia as N		7800	1400	mg/kg	100	50	EPA-350.1	ND	A07	4
Total Phosphorus		26000	4700	mg/kg	200	76	EPA-365.4	ND	A07	5
Solids		100	17.9	%	0.05	0.05	SM-2540G		*	6

			Run				QC
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID
1	EPA-9040	03/06/15	03/06/15 10:45	DIW	MANUAL	1	BYC0589
2	EPA-300.0	03/10/15	03/10/15 22:28	BMW	IC8	1	BYC0879
3	EPA-351.2	03/06/15	03/09/15 12:49	JP1	SC-1	20	BYC0601
4	EPA-350.1	03/10/15	03/16/15 12:47	JP1	SC-1	10	BYC0914
5	EPA-365.4	03/06/15	03/09/15 08:56	JP1	SC-1	20	BYC0602
6	SM-2540G	03/04/15	03/04/15 14:40	RAC	MANUAL	1	BYC0370

organic Nitrosa = TKN - Amomia
2 49000 - 7800 = 41,200



Reported: 03/17/2015 12:59

Project: Bi-Monthly Biosolids

Project Number: Nutrients & Metals Project Manager: Barbara Pierson

1505047-01	Client Samp	le Name:	150535 WV	VTP Biosoli	ds, 2/26/20	015 10:00:00AM	, J. Gonzalez		
	Dry Basis Result	As Recvd Result	Units	PQL	MDL.	Method	MB Bias	Lab Quals	Run#
	ND	ND	mg/kg	1.0	0.40	EPA-6010B	ND		1
	3.0	0.53	mg/kg	0.50	0.052	EPA-6010B	ND		1
	82	15	mg/kg	0.50	0.050	EPA-6010B	ND		1
	520	93	mg/kg	1.0	0.050	EPA-6010B	0.061	20	1
	19	3.4	mg/kg	2.5	0.28	EPA-6010B	ND		1
	1.1	0.20	mg/kg	0.16	0.036	EPA-7471A	ND		2
	10	1.9	mg/kg	2.5	0.050	EPA-6010B	0.13	J	1
	27	4.9	mg/kg	0.50	0.15	EPA-6010B	ND		1
	ND	ND	mg/kg	1.0	0.98	EPA-6010B	ND		1
	2.1	0.38	mg/kg	0.50	0.067	EPA-6010B	ND-	J	1-
	1000	180	mg/kg	2.5	0.087	EPA-6010B	0.62		1
	21	3.8	mg/kg	5.0	0.50	EPA-6010B	ND	J	1
	1200	210	mg/kg	25	3.6	EPA-6010B	ND		1
	1200	210	mg/kg	50	5.0	EPA-6010B	ND		1
	1505047-01	Dry Basis Result ND 3.0 82 520 19 1.1 10 27 ND 2.1 1000 21 1200	Dry Basis Result As Recvd Result ND ND 3.0 0.53 82 15 520 93 19 3.4 1.1 0.20 10 1.9 27 4.9 ND ND 2.1 0.38 1000 180 21 3.8 1200 210	Dry Basis Result As Recvd Result Units ND ND mg/kg 3.0 0.53 mg/kg 82 15 mg/kg 520 93 mg/kg 19 3.4 mg/kg 1.1 0.20 mg/kg 10 1.9 mg/kg 27 4.9 mg/kg ND ND mg/kg 2.1 0.38 mg/kg 1000 180 mg/kg 21 3.8 mg/kg 1200 210 mg/kg	Dry Basis Result As Recvd Result Units PQL ND ND mg/kg 1.0 3.0 0.53 mg/kg 0.50 82 15 mg/kg 0.50 520 93 mg/kg 1.0 19 3.4 mg/kg 2.5 1.1 0.20 mg/kg 0.16 10 1.9 mg/kg 0.50 ND ND mg/kg 0.50 ND ND mg/kg 1.0 2.1 0.38 mg/kg 0.50 1000 180 mg/kg 2.5 21 3.8 mg/kg 5.0 1200 210 mg/kg 25	Dry Basis Result As Recvd Result Units PQL MDL MDL MDL ND ND mg/kg 1.0 0.40 3.0 0.53 mg/kg 0.50 0.052 82 15 mg/kg 0.50 0.050 520 93 mg/kg 1.0 0.050 19 3.4 mg/kg 2.5 0.28 1.1 0.20 mg/kg 0.16 0.036 10 1.9 mg/kg 2.5 0.050 27 4.9 mg/kg 0.50 0.15 ND ND mg/kg 1.0 0.98 2.1 0.38 mg/kg 0.50 0.067 1000 180 mg/kg 2.5 0.087 21 3.8 mg/kg 5.0 0.50 1200 210 mg/kg 25 3.6	Dry Basis Result As Recvd Result Units PQL PQL MDL Method ND ND mg/kg 1.0 0.40 EPA-6010B 3.0 0.53 mg/kg 0.50 0.052 EPA-6010B 82 15 mg/kg 0.50 0.050 EPA-6010B 520 93 mg/kg 1.0 0.050 EPA-6010B 19 3.4 mg/kg 2.5 0.28 EPA-6010B 1.1 0.20 mg/kg 0.16 0.036 EPA-7471A 10 1.9 mg/kg 2.5 0.050 EPA-6010B 27 4.9 mg/kg 0.50 0.15 EPA-6010B ND ND mg/kg 1.0 0.98 EPA-6010B 2.1 0.38 mg/kg 0.50 0.067 EPA-6010B 1000 180 mg/kg 2.5 0.087 EPA-6010B 21 3.8 mg/kg 5.0 0.50 EPA-6010B	Dry Basis Result As Recvd Result Units PQL MDL Method Bias ND ND mg/kg 1.0 0.40 EPA-6010B ND 3.0 0.53 mg/kg 0.50 0.052 EPA-6010B ND 82 15 mg/kg 0.50 0.050 EPA-6010B ND 520 93 mg/kg 1.0 0.050 EPA-6010B ND 19 3.4 mg/kg 2.5 0.28 EPA-6010B ND 1.1 0.20 mg/kg 0.16 0.036 EPA-7471A ND 10 1.9 mg/kg 2.5 0.050 EPA-6010B 0.13 27 4.9 mg/kg 0.50 0.15 EPA-6010B ND ND ND mg/kg 0.50 0.067 EPA-6010B ND 1000 180 mg/kg 2.5 0.087 EPA-6010B ND 1000 180 mg/kg 2.5 0.087 <td> Dry Basis As Recvd Result Units PQL MDL Method Bias Quals </td>	Dry Basis As Recvd Result Units PQL MDL Method Bias Quals

			Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-6010B	03/05/15	03/06/15 12:06	JRG	PE-OP2	0.962	BYC0413	
2	EPA-7471A	03/04/15	03/05/15 09:26	MEV	CETAC1	1.025	BYC0374	

Facility Name: City of Watsonville Wastewater Treatment Plant Monitoring Period 4 / 01 / 15 to 5/ 31 / 15

	As	Cd	Cu	Pb	Hg	Mo	Ni	Se	Zn	Org-N	NH ₄ -N	% solids
Result	5.2	3.2	460	19	1.5	10	28	15	920	48100	5900	16.6
Table 3	41	39	1500	300	17	na	420	100	2800	na	na	na
Table 1	75	85	4300	840	57	75	420	100	7500	na	na	na

Table 1 /3	0.5	4300	040	31	75	420	100	7500	IIa	na	na.
Sampling date(s): _	4/20/1	15, 4/22/15								*	
2. Class B Pathogen	Reduct	tion: (Che	ck off a	nd fill in	applicab	ole portio	on)				
anaerobic diges	e (days) on for e (days) cto e > 3 mo geometr metric n on: pH a	≥ 120 - 3(1 to	temp, de days at (temp, de temp, de tem	egrees C) tto legrees C ach reco degree amples = ples is < dition =	for time c) do c) for time rds of da s C = _662 (a 2,000,00	es betwee egrees F nes betwee ntes in an	en 15 and C (rang een 40 and d out)	d 60 days ge for past id 60 days	month)	nth)	
3. Vector Attraction	Reduct	tion:									
Option 4: SO VAR: SO Option 5: Con VAR: ten Option 6: tim VAR: pl Option 7: % s VAR: sta Option 8: % s VAR: un: Option 9/10:	$R > 38\%$ ench scalitional $UR = _$ $UR < 1$ mposted $IP > 40$ e alkali $IP = 12$ foolids = abilized foolids = stabilized Applier	% ale test: % VSR < 17' 5 mg O ₂ /h 1 da degrees C added: or 2 hours S solids > 75'	o VSR = % after or/gram ys at ten for 14 d pafter all stabiliza 5% 90% t/incorp	a 40 days((dry wei nps of lays, w/5 H after 2 kali addi tion met	fter	deg 45 degree = pH 1.5 for ad hour	% after : rees F/C es C after 22 dditiona	hours = _	nes/temps)		
Certification: I cer or supervision in acc information submitt responsible for gathe accurate, and compl possibility of fine an	cordance ed. Bas ering the ete. I a	e with a sy ed on my i e informat m aware t	estem de inquiry tion, the hat ther	signed to of the pe informa e are sign	o assure rson or p tion sub nificant p	that qual persons v mitted is	lified per who man , to the l	rsonnel pro age the sys est of my	operly gath stem or the knowledge	er and eval persons di and belief,	luate the rectly true,
Name and Official T	itle: _E	Barbara Pi	erson,	Laborato	ory Man	ager					
Phone: (831) 768-31	<u>79</u> _	E-mai	il: <u>bpie</u>	rson@ci	.watsonv	ille.ca.us	S				
Signature:	7/2	Y)		Da	te:	8/12/1	5			



Reported: 05/08/2015 11:54 Project: Bi-Monthly Biosolids

Project Number: Metals & Nutrients Project Manager: Barbara Pierson

Chemical Analysis

BCL Sample ID:	1509877-01	Client Samp	le Name:	WWTP Belt Press Biosolids, 4/22/2015 10:15:00AM, Barbara Pierson								
		Dry Basis	As Recvd					МВ	Lab			
Constituent		Result	Result	Units	PQL	MDL	Method	Bias	Quals	Run#		
рН		7.64	7.64	pH Units	0.05	0.05	EPA-9040		pH1:3	1		
pH Measurement Tem	perature	23.0	23.0	С	0.1	0.1	EPA-9040			1		
Nitrate as N		12	2.0	mg/kg	1.0	0.26	EPA-300.0	ND		2		
Total Kjeldahl Nitroge	n	54000	8900	mg/kg	400	160	EPA-351.2	ND	A07	3		
Ammonia as N		5900	980	mg/kg	200	100	EPA-350.1	ND	A07	4		
Total Phosphorus		28000	4700	mg/kg	200	76	EPA-365.4	ND	A07	5		
Solids		100	16.6	%	0.05	0.05	SM-2540G			6		

			Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-9040	05/01/15	05/01/15 10:15	DIW	MANUAL	1	BYE0067	
2	EPA-300.0	04/30/15	05/01/15 19:35	BMW	IC2	1	BYD2608	
3	EPA-351.2	05/06/15	05/07/15 09:28	JMH	SC-1	10	BYE0477	
4	EPA-350.1	05/01/15	05/02/15 09:37	JMH	SC-1	20	BYE0107	
5	EPA-365.4	05/06/15	05/07/15 09:47	JMH	SC-1	20	BYE0478	
6	SM-2540G	04/28/15	04/28/15 11:30	RAC	Inst	1	BYD2419	

Org-N = TKN-ammonia = 54000-5900 = 48100



Reported: 05/08/2015 11:54 Project: Bi-Monthly Biosolids

Project Number: Metals & Nutrients Project Manager: Barbara Pierson

BCL Sample ID:	1509877-01	Client Samp	le Name:	WWTP Belf	Press Bios	solids, 4/22	2/2015 10:15:00	AM, Barbara I	Pierson	
Constituent		Dry Basis Result	As Recvd Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#
Arsenic		5.2	0.87	mg/kg	1.0	0.40	EPA-6010B	ND	J	1
Cadmium		3.2	0.53	mg/kg	0.50	0.052	EPA-6010B	ND		1
Chromium		75	12	mg/kg	0.50	0.050	EPA-6010B	ND		1
Copper		460	76	mg/kg	1.0	0.050	EPA-6010B	ND		1
Lead		19	3.2	mg/kg	2.5	0.28	EPA-6010B	ND		1
Mercury		1.5	0.24	mg/kg	0.16	0.036	EPA-7471A	ND		2
Molybdenum		10	1.7	mg/kg	2.5	0.050	EPA-6010B	0.082	J	1
Nickel		28	4.7	mg/kg	0.50	0.15	EPA-6010B	ND		1
Selenium		15	2.4	mg/kg	1.0	0.98	EPA-6010B	ND		1
Zinc		920	150	mg/kg	2.5	0.087	EPA-6010B	ND		1
Boron		49	8.1	mg/kg	5.0	0.50	EPA-6010B	ND		3
Potassium		1400	240	mg/kg	50	5.0	EPA-6010B	10		1

			Run				QC
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID
1	EPA-6010B	04/27/15	04/28/15 15:46	ARD	PE-OP3	0.943	BYD2310
2	EPA-7471A	04/28/15	04/28/15 16:06	MEV	CETAC1	1.025	BYD2380
3	EPA-6010B	04/27/15	04/29/15 14:08	ARD	PE-OP3	0.943	BYD2310

Facility Name: City of Watsonville Wastewater Treatment Plant Monitoring Period 6 / 01 / 15 to 7/ 31 / 15

	As	Cd	Cu	Pb	Hg	Mo	Ni	Se	Zn	Org-N	NH ₄ -N	% solids
Result	5.2	3.2	460	19	1.5	10	28	15	920	48100	5900	16.6
Table 3	41	39	1500	300	17	na	420	100	2800	na	na	na
Table 1	75	85	4300	840	57	75	420	100	7500	na	na	na

Sampling date(s):6/16/15, 6/29/15
2. Class B Pathogen Reduction: (Check off and fill in applicable portion)
anaerobic digestion for to days at to degrees F / C (range for past month) Class B: time (days) ≥ 120 - 3(temp, degrees C) for times between 15 and 60 days aerobic digestion for to days at to degrees F / C (range for past month) Class B: time (days) ≥ 120 - 4(temp, degrees C) for times between 40 and 60 days drying beds for to months (attach records of dates in and out) Class B: time > 3 months; 2 months > 0 degrees C X fecal coliform: geometric mean of seven samples =15766 (attach lab results) Class B: geometric mean of seven samples is < 2,000,000 mpn lime stabilization: pH at 2 hours after addition = Class B: pH 2 hours after addition of lime is ≥ 12
3. Vector Attraction Reduction:
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$
Certification: I certify, under penalty of law, that this document and all attachments were prepared under my directio or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or the persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.
Name and Official Title: <u>Barbara Pierson, Laboratory Manager</u>
Phone: (831) 768-3179 E-mail: ppierson@ci.watsonville.ca.us Signature: Date: 8/12/15



Reported:

07/06/2015 11:49

Project: Bi-Monthly Biosolids

Project Number: Nutrients & Metals

Project Manager: Barbara Pierson

Chemical Analysis

BCL Sample ID:	1514892-01	Client Samp	le Name:	WWTP Bios	olids, 6/16	/2015 12:4	45:00PM			
Constituent		Dry Basis Result	As Recvd Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#
pH		7.44	7.44	pH Units	0.05	0.05	EPA-9040		pH1:1	1
pH Measurement Ten	perature	26.2	26.2	С	0.1	0.1	EPA-9040			1
Nitrate as N		9.9	1.5	mg/kg	1.0	0.26	EPA-300.0	ND		2
Total Kjeldahl Nitroge	en .	55000	8400	mg/kg	400	160	EPA-351.2	ND	A07	3
Ammonia as N		8000	1200	mg/kg	100	50	EPA-350.1	ND	A07	4
Total Phosphorus		35000	5300	mg/kg	200	76	EPA-365.4	ND	A07	5
Solids		100	15.3	%	0.05	0.05	SM-2540G			6

			Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-9040	06/30/15	06/30/15_12:15_	DIW	MANUAL	1	BYG0045	
2	EPA-300.0	06/23/15	06/23/15 15:30	BMW	IC2	1	BYF2048	
3	EPA-351.2	06/23/15	06/24/15 09:24	JMH	SC-1	10	BYF2074	
4	EPA-350.1	06/23/15	06/24/15 14:25	JMH	SC-1	9.804	BYF2077	
5 -	EPA-365.4	06/23/15	06/24/15 08:23	JMH	SC-1	20	BYF2110	
6	SM-2540G	06/19/15	06/19/15 13:00	DIW	MANUAL	1	BYF1879	



Reported: 07/06/2015 11:49
Project: Bi-Monthly Biosolids

Project Number: Nutrients & Metals Project Manager: Barbara Pierson

BCL Sample ID:	1514892-01	Client Samp	le Name:	WWTP Bios	solids, 6/16	/2015 12:4	45:00PM			
Constituent		Dry Basis Result	As Recvd Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Arsenic		3.0	0.46	mg/kg	1.0	0.40	EPA-6010B	ND	J	1
Cadmium		3.2	0.49	mg/kg	0.50	0.052	EPA-6010B	ND	J	1
Chromium		86	13	mg/kg	0.50	0.050	EPA-6010B	ND		1
Copper		460	70	mg/kg	1.0	0.050	EPA-6010B	ND		1
Lead		11	1.7	mg/kg	2.5	0.28	EPA-6010B	ND	J	1
Mercury		1.0	0.16	mg/kg	0.16	0.036	EPA-7471A	ND		2
Molybdenum		11	1.7	mg/kg	2.5	0.050	EPA-6010B	ND	J	1
Nickel		32	5.0	mg/kg	0.50	0.15	EPA-6010B	ND		1
Selenium		7.3	1.1	mg/kg	1.0	0.98	EPA-6010B	ND		1
Silver		1.5	0.23	mg/kg	0.50	0.067	EPA-6010B	ND	J	1
Zinc		950	150	mg/kg	2.5	0.087	EPA-6010B	0.23		1
Boron		33	5.0	mg/kg	5.0	0.50	EPA-6010B	1.5		1
Sodium		1700	250	mg/kg	25	3.6	EPA-6010B	ND		1
Potassium		1400	210	mg/kg	50	5.0	EPA-6010B	ND		1

			Run				QC
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID
1	EPA-6010B	06/25/15	06/26/15 10:10	ARD	PE-OP3	0.926	BYF2343
2	EPA-7471A	06/25/15	06/25/15 13:33	MEV	CETAC1	1.008	BYF2330

City of Watsonville Utilities Laboratory

Pathogen Reduction Supporting Data Fecal Coliform Monitoring

		MPN	MPN/gram (dry weight)			
Date Analyzed	8/25/2014	10/27/2014	12/15/2014	2/23/2015	4/20/2015	6/29/2015
Date Sampled	8/25/2014	10/27/2014	12/15/2014	2/23/2015	4/20/2015	6/29/2015
Sample			ě			
_	27	2,843	4,255	1,352	27	125,581
2	2,205	24,876	5,159	2,222	99	35
3	62,035	29,762	17,341	12,429	199	49
4	360,000	12,865	11,258	46,700	6,214	196,629
വ	22,124	71,823	8,280	26,341	3,977	126,984
9	53,254	14,118	200	8,247	1,196	221,311
7	7,303	2,941	1,504	1,934	5,476	203,488
Geometric		5				
Mean*	10,205	13,477	4,508	6,884	662	15,766

^{*} To meet Class B Standards, samples must have <2,000,000 MPN/gram fecal coliform. All samples are well below this criteria. Samples collected from 7 discrete locations on the drying bed at the Wastewater Treatment Facility Sample analyzed on the same day they were collected by Utilities Department Laboratory Analyst